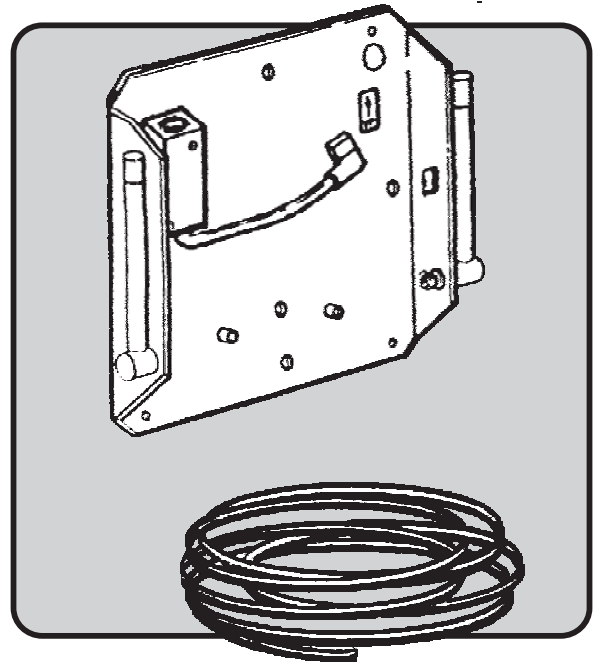




**FLO-SAFE
Manifold System
Pre-Installation Kit**

Instruction Manual

Reference Only



Matrix

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Safety Warnings and Important Information

IMPORTANT: Installation must be performed by qualified technicians in accordance with local codes.

WARNING: To prevent any possibility of cross-connection of oxygen and nitrous oxide, FLO-SAFE components use a diameter indexing system. All oxygen tubing must be 1/2" O.D. and nitrous oxide tubing 3/8" O.D. Modifying this piping convention exposes the installer to liability and presents a hazard to the doctor and his patients.

CAUTION: If the optional Zone Valve is installed, protect the valve body from heat damage by wrapping the connecting tails with wet rags during brazing.

1.1 Kit Contents

The FLO-SAFE Manifold System Pre-installation Kit consists of these four items:

- Manifold mounting plate assembly with copper tubing pigtails
- Four-conductor alarm signal cable -100'
- Hardware package containing:
 - #10 x 3/4" wood screws - 4
 - Hollow wall anchors - 4
 - Wire nuts - 2
 - #6-32 nuts with lock washers - 2
 - Romex connector - 1
 - Lug connector - 1
 - #10-32 x 2" socket head screws - 2
(For manifold installation, leave finger-tight in manifold mounting plate threaded sockets.)

1.2 Installation of Manifold Mounting Plate

See Figure 1 to select a location for the manifold mounting plate. The location selected must be within 36 inches of the proposed location for the gas cylinders because 36-inch lines are provided to connect the FLO-SAFE Manifold to the cylinders. Mount the bottom edge of mounting plate 5 feet above the floor.

NOTE: UP label indicates proper orientation.

1.2.1 Drywall Mounting

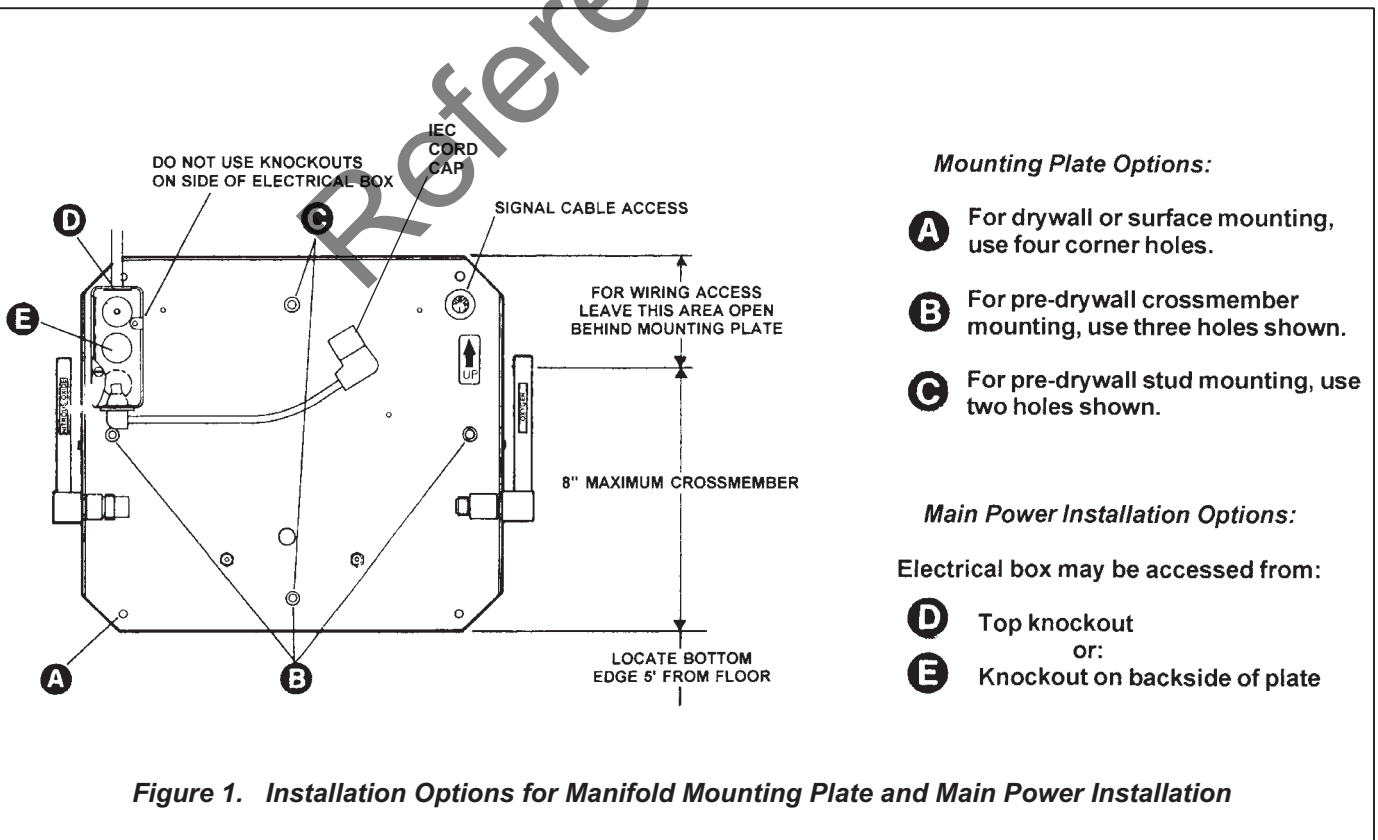
1. Use the mounting plate as a template. Mark locations of the four spacers on back of plate and the four corner holes.
2. Drill 1" diameter clearance holes through drywall at each spacer location so mounting plate fits flush to wall.
3. Drill 1/4" holes at corner holes. Insert hollow wall anchors in corner holes. Attach plate using anchors.

1.2.2 Wall Stud Mounting

1. Use mounting plate as a template. Mark the upper and lower rear spacer holes.
2. Attach mounting plate to stud using wood screws.

1.2.3 Crossmember Mounting

1. Use mounting plate as a template. Mark the left, right and lower rear spacer holes.
2. Attach mounting plate using wood screws.



MANIFOLD PLATE MOUNTING

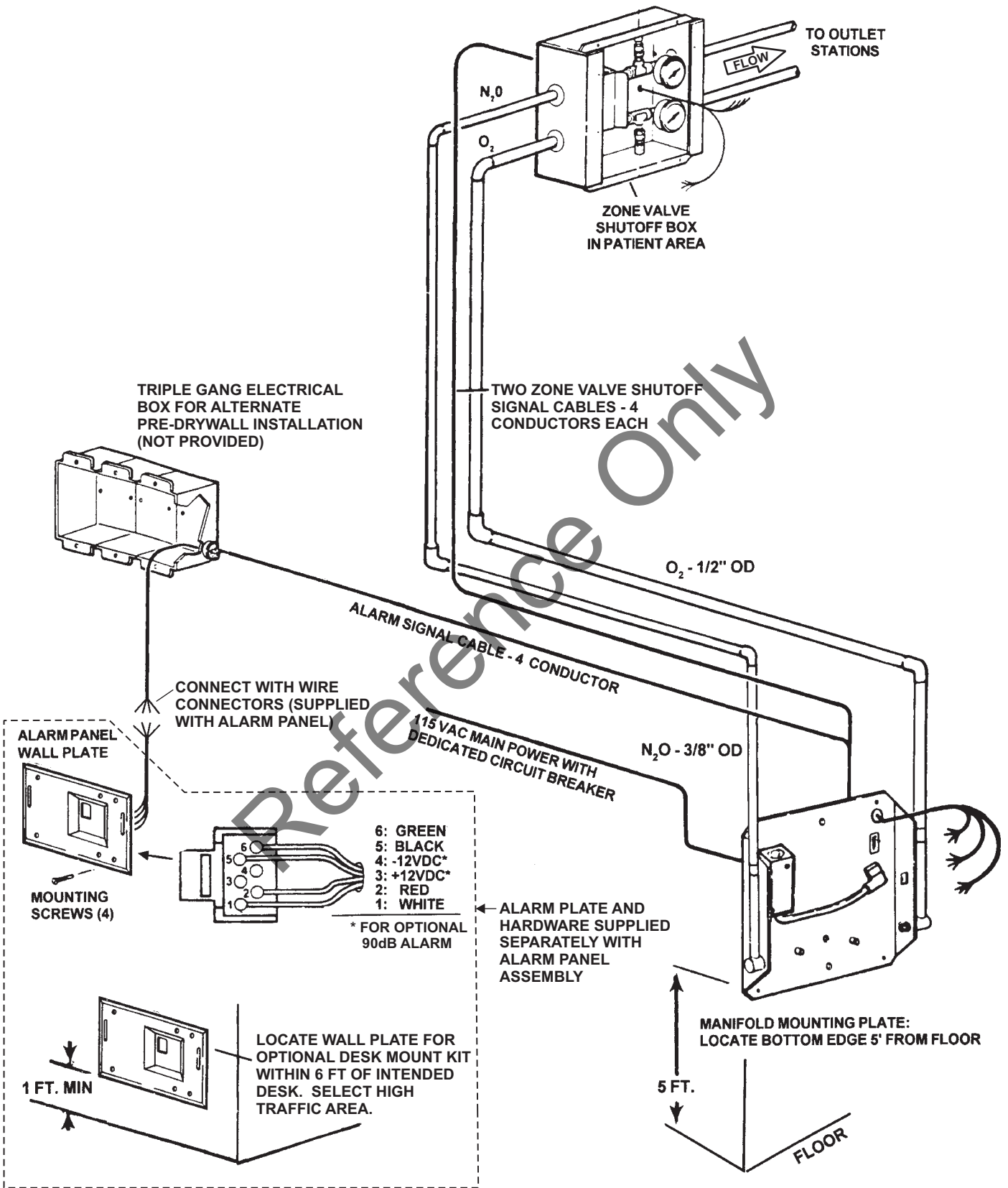


Figure 2. Manifold Plate Pre-Installation

2.1 Piping System Installation

Install O₂ and N₂O copper tubing (shown in Figure 2) as follows:

1. Leave 1/2" of lateral flexibility in piping at mounting plate pigtails to allow for installation of the FLO-SAFE manifold.
2. If the optional Zone Valve is installed, wrap wet rags around piping to prevent heat damage to the valve body. See Figure 3.

2.1.1 Piping Materials and Brazing Methods

1. Piping is to be annealed (soft temper) ASTM B88 Type K or L copper tubing, cleaned for oxygen service and capped prior to installation.
2. Joints are to be brazed without the use of flux.
3. To prevent cross-connection of oxygen and nitrous oxide:
 - All oxygen tubing to be 1/2" O.D.
 - All nitrous oxide tubing to be 3/8" O.D.
 - All vacuum tubing to be 5/8" O.D.
4. While brazing, purge piping system with low flow, oil-free, dry nitrogen to prevent formation of copper oxide in the line.

2.1.2 Testing the Piping System

After brazing all joints, test piping:

1. Pressurize piping system to 150 psig with oil-free dry nitrogen and leak test all joints.
2. Allow piping system to remain pressurized to 150 psig for 24 hours with source shutoff valve closed. Maximum allowable pressure loss is 5 psi.

2.1.3 Purging the Piping System

After successful completion of pressure testing, purge the piping system:

1. Blow piping system clear with oil-free dry nitrogen.
2. Purge piping system with intermittent high flow oil-free dry nitrogen to remove any particulate matter. Flow each outlet fully until purging process produces no discoloration in a white cloth.
3. Cap piping system. No further brazing shall be performed.
4. If further brazing is required, leak test and purge must be repeated.

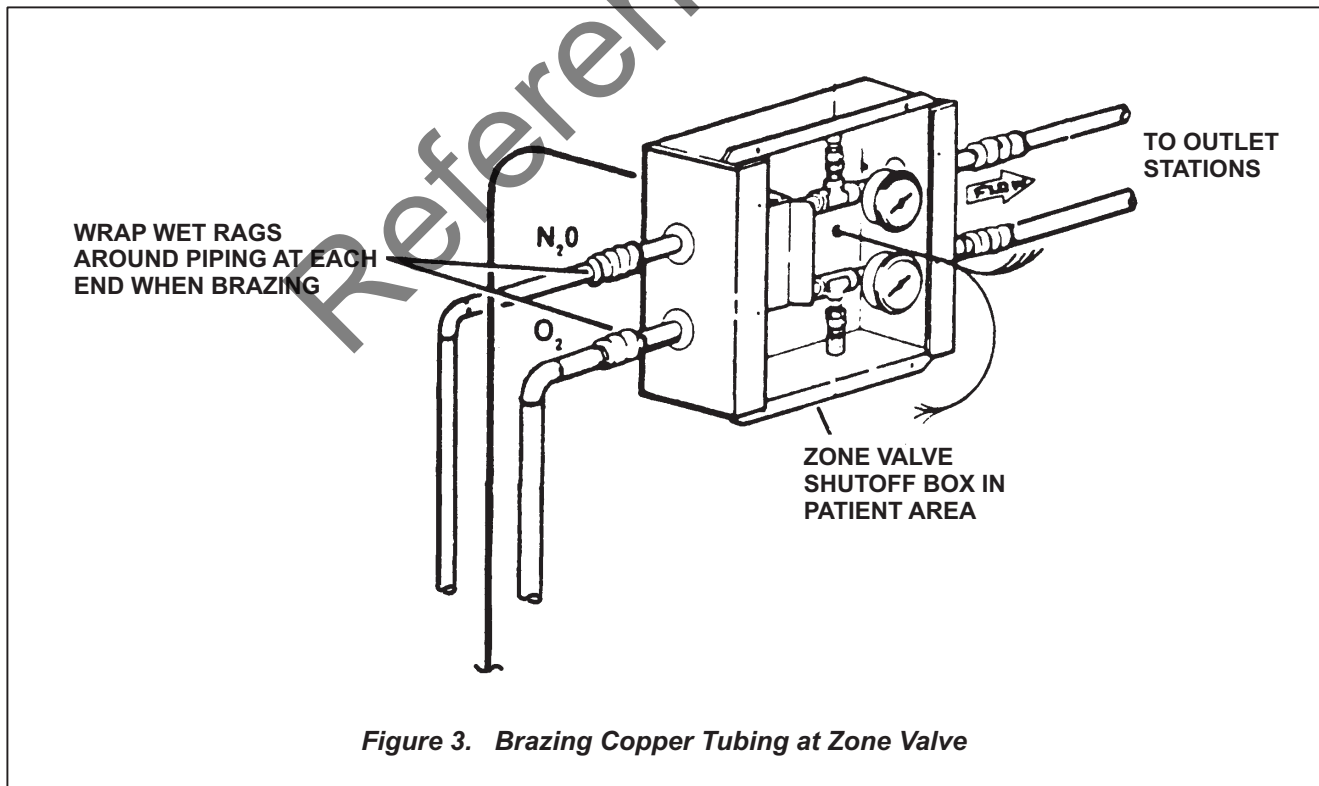


Figure 3. Brazing Copper Tubing at Zone Valve

3.1 Supply Circuit Connection

All electrical connections must be made to local codes by a licenced electrician. A dedicated 15A, 115VAC, 14 gauge supply circuit is required. This must be a dedicated circuit due to the emergency system requirements, rather than the amperage demands, of the FLO-Safe system.

To install the supply line:

1. Feed dedicated branch circuit line to Manifold Mounting Plate electrical box.
 - For surface-mounted power line, use knockout on top of box.
 - For in-wall power line, use rear center knockout.

Note: Do not use side knockouts on electrical box.

2. Attach bushing of supplied Romex connector to incoming cable. Insert connector through chosen knockout and secure with connector locknut.

3. Connect supply hot line to black or brown wire using wire connector provided.
4. Connect Supply neutral line to white or blue wire using wire connector provided.
5. Connect supply ground to ground post inside electrical box. Attach ground of Manifold power cord to same post using #6-32 nut provided.
6. Attach cover to box.
7. To facilitate future servicing, label dedicated Manifold System supply circuit at service panel.

3.2 Low Voltage Signal Cable

Feed low voltage four-conductor alarm signal cable (provided) through plastic bushing at upper right corner of Manifold Mounting Plate. Run opposite end to Alarm Panel Mounting Plate (supplied with Alarm Panel).

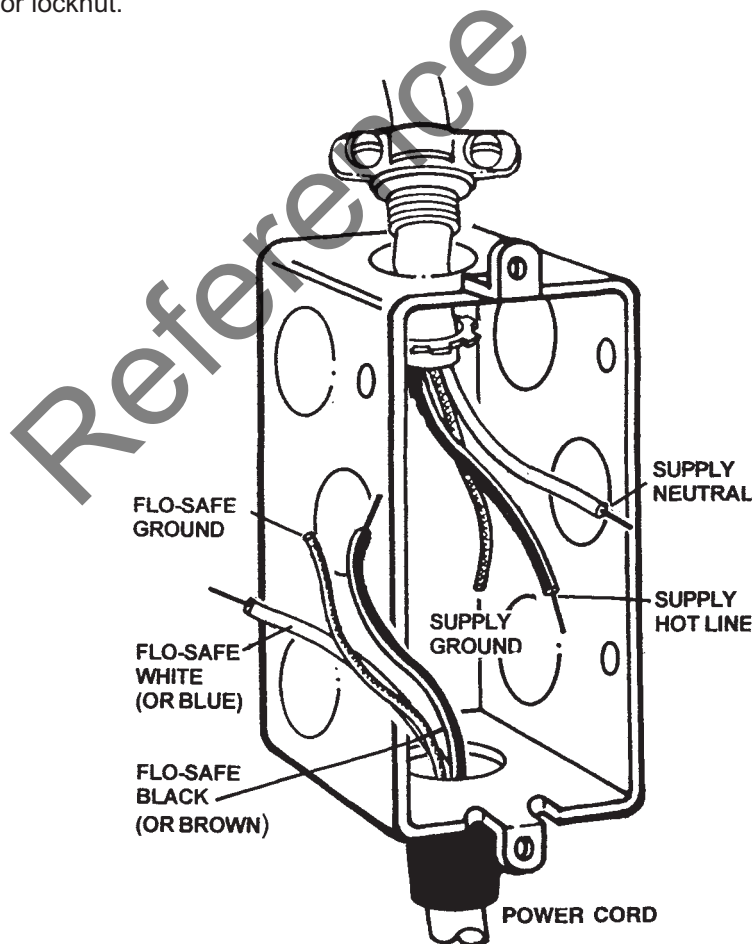


Figure 4. Supply Power Connection to Manifold

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FM 40049

ISO-9001

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